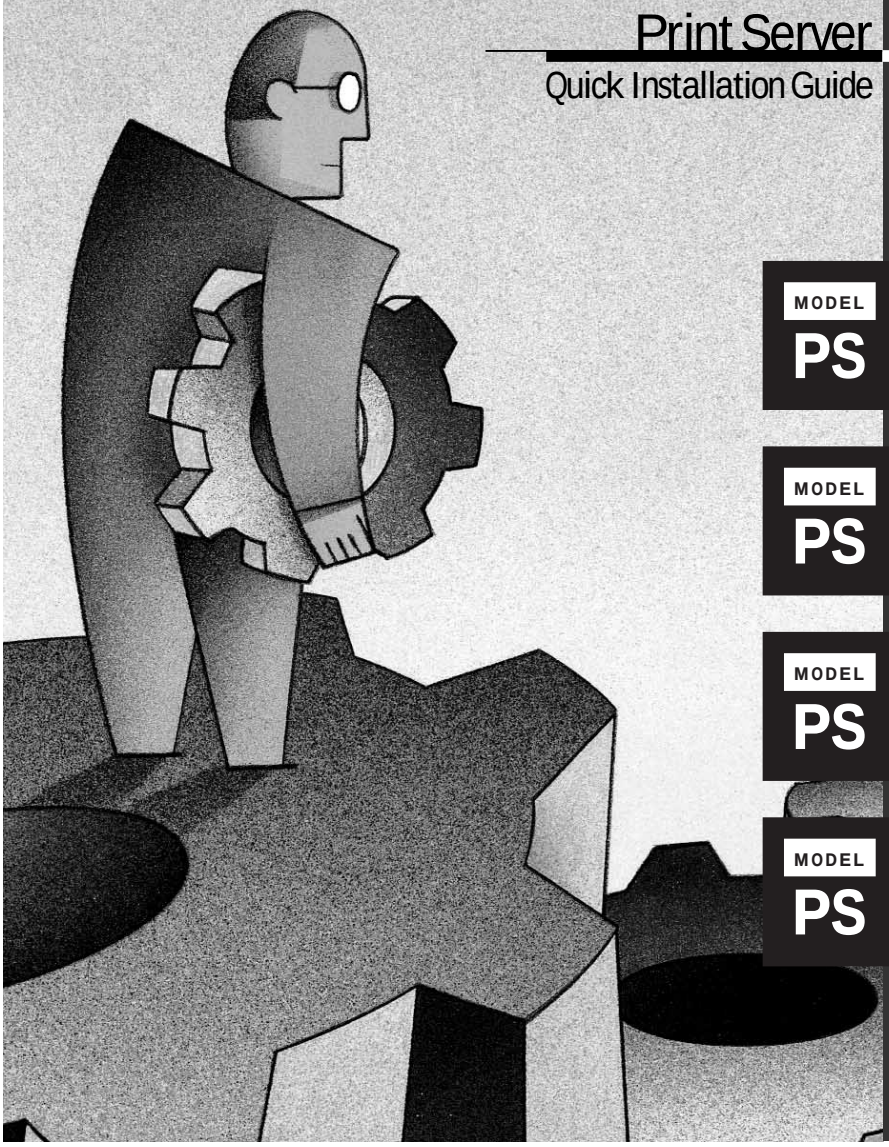
NETGEAR™

Print Server

Quick Installation Guide



MODEL PS 104

MODEL PS 105

MODEL PS 110

MODEL PS 113

START HERE

Instructions in this guide are for users with the following:

- Microsoft® Windows® 95, Windows® 98, Windows® 2000, or Windows NT®
- A network card installed with the NetBEUI protocol

All other users must refer to Installation and Reference for the Model PS104/PS105/PS110/PS113 Printer Server on the PS100 Series Print Server Resource CD for complete hardware and software installation instructions.

If you have not yet installed network cards in your PCs, you can use the Model FA311 network card, a NETGEAR™ product. Additionally, if you want to set up a network, you can use the Model DB104 10/100 Mbps Fast Ethernet Network Starter Kit or the Model SB104 10 Mbps Starter Kit, also NETGEAR products.

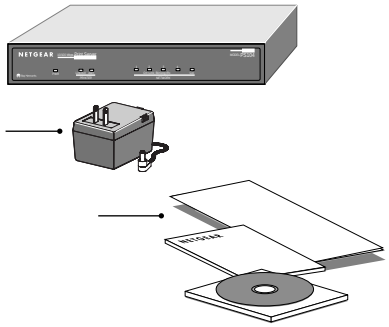
FEATURES

The Model PS104, Model PS105, Model PS110, or PS113 print server has these features:

- Support for NetBEUI, TCP/IP, and IPX/SPX protocols and Windows 95, Windows 98, Windows 2000, Windows NT, Novell NetWare, and UNIX operating systems
- Autosensing 10/100 megabit per second (Mbps) port for 10BASE-T and 100BASE-T Ethernet connections (Model PS110 and PS113)
- Built-in 4-port and 5-port hub functionality (Model PS104: four 10BASE-T ports; Model PS105: four 10BASE-T ports and one BNC port)
- FirstGear™ software program developed by NETGEAR, which enables easy configuration of the print server for Windows 95, Windows 98, Windows 2000, and Windows NT users operating on a Microsoft network
- Compact size that allows the print server to be used where space is limited and to be mounted with Velcro on the side of a printer
- Flash EPROM upgradability

  Extensive LED indicators for at-a-glance status:

PACKAGE CONTENT



Verify that your package contains the following:

- Model PS104, Model PS105, Model PS110, or PS113 print server
- Power adapter
- BNC terminator and T-Connector (Model PS105 only)
- PS100 Series Print Server Resource CD
- This installation guide
- Warranty & Owner Registration Card
- Support Information Card

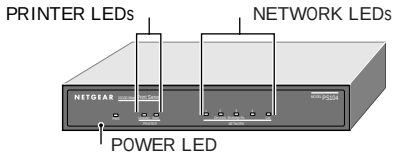
Note: If the supplied power adapter does not meet your country requirements, make sure you use the appropriate power adapter as required by your national electrical codes and ordinances.

Customer Support

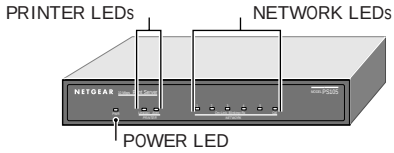
Call your reseller or NETGEAR Customer Support in your area if there are any wrong, missing, or damaged parts.

Keep the carton, including the original packing materials. Use them to repack the print server if you need to return it for repair.

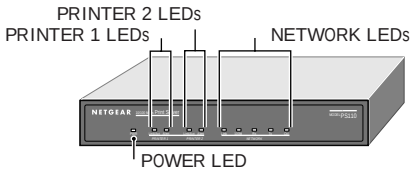
PRODUCT ILLUSTRATION



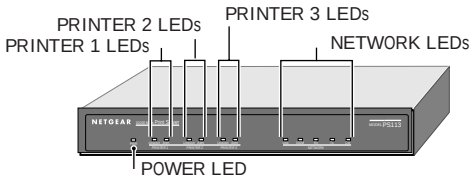
Front Panel of the Model PS104 Print Server



Front Panel of the Model PS105 Print Server



Front Panel of the Model PS110 Print Server



Front Panel of the Model PS113 Print Server

LEDs

The following table describes the activity of the LEDs on the PS100 Series print servers.

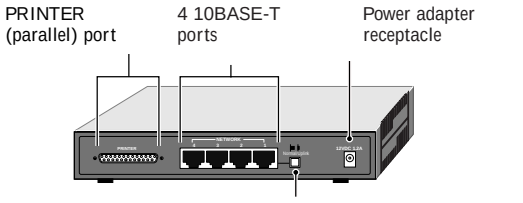
Label	Color	Activity	Description
PWR (power)	Green	On	Power is supplied to the print server.
PRINTER, PRINTER 1, PRINTER 2, or PRINTER 3			
Link/Act	Green	On	A printer is connected to the port.
		Off	No printer is connected to the port.
		Blinking	Data transmission is occurring on the port.
Alert	Amber	On	The connected printer is offline, is out of paper, or has a paper jam.
		Off	The connection between the printer and print server is good.
NETWORK (On Model PS104 and Model PS105)			
Link/Rx	Green	Off	No link exists between the port and the network.
		On	The 10 Mbps half-duplex link between the print server and the network is good.
		Blinking	Incoming data is on the port.
Col (collision)	Amber	Blinking	Data collision is occurring on the network. Note that occasional collisions are normal.
NETWORK (On Model PS110 and PS113)			
Link	Green	On	The link between the port and the network is good.
100M	Green	On	The link between the port and the network is a 100 Mbps half-duplex connection.
		Off	The link between the port and the network is a 10 Mbps half-duplex connection.
Tx	Green	Blinking	The print server is sending data out of the port.
Rx	Green	Blinking	The print server is receiving data on the port.
Col (collision)	Amber	Blinking	Data collision is occurring on the network. Note that occasional collisions are normal.

Rear Panel

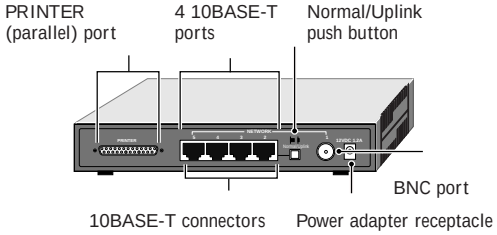
The rear panel of the Model PS104 Print Server and Model PS105 Print Server has one parallel PRINTER port, the rear panel of the Model PS110 Print Server has two parallel ports for printers (PRINTER 1 and PRINTER 2), and the rear panel of the Model PS113 Print Server has three parallel ports for printers (PRINTER 1, PRINTER 2, and PRINTER 3). These printer ports accept either printers or other parallel devices such as a plotter.

Number of Ports	PS104	PS105	PS110	PS113
10BASE-T	4	4	n/a	n/a
BNC	n/a	1	n/a	n/a
Autosensing 10/100BASE-T	n/a	n/a	1	1
Parallel Printer Port	1	1	2	3

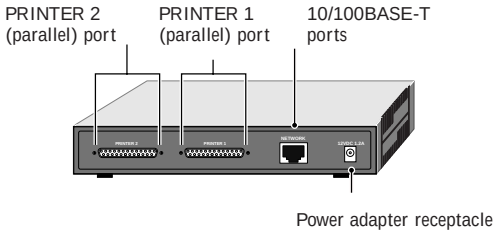
All models have a power adapter receptacle that accepts a 12 V DC power adapter.



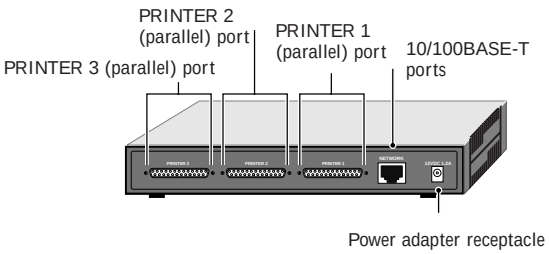
Rear Panel of the Model PS104 Print Server



Rear Panel of the Model PS105 Print Server



Rear Panel of the Model PS110 Print Server



Rear Panel of the Model PS113 Print Server

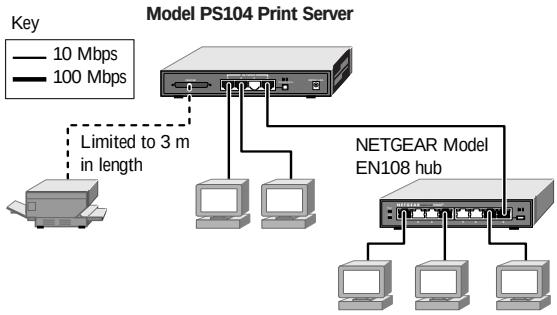
Normal/Uplink Push Button (Model PS104 and Model PS105 Only)

The Normal/Uplink push button on the Model PS104 and Model PS105 print servers allows you to select Normal (MDI-X for connecting to a PC) or Uplink (MDI for connecting to a hub or switch) wiring for the first 10BASE-T port, eliminating the need to use a crossover cable. The other10BASE-T ports on the Model PS104 and Model PS105 print servers are permanently configured for Normal wiring; the one network port on the Model PS110 and PS113 Print Server is permanently configured for Uplink wiring.

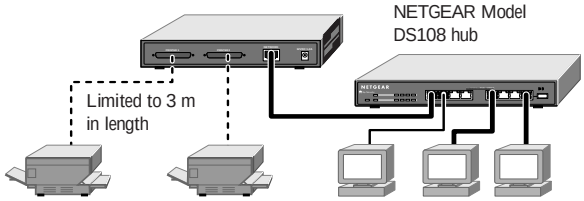
TYPICAL APPLICATIONS

This section illustrates some examples of how the PS100 Series print servers are typically installed in a network.

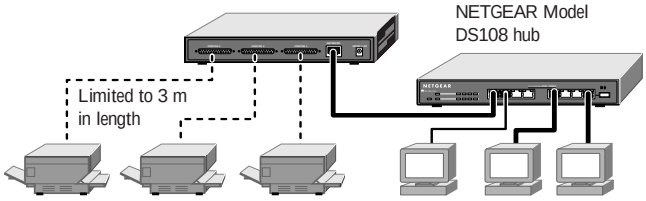
Model PS104 Print Server



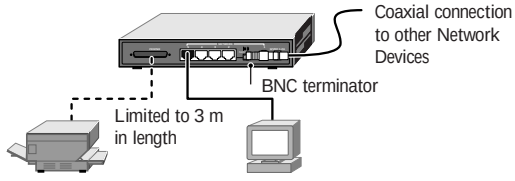
Model PS110 Print Server



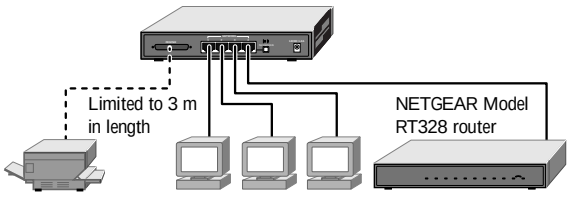
Model PS113 Print Server



Model PS105 Print Server



Model PS105 Print Server



INSTALL THE PRINT SERVER

You can place the print server on a desktop or any flat surface. To save work space, you can also mount the print server with Velcro strips on the side of a printer.

CONNECT THE PRINTER CABLES

Connect a cable (not provided) from the printer to the parallel PRINTER port on the print server. If you are connecting one printer to the Model PS110 Print Server, or model PS113 Print Server you can use one of the ports.

CONNECT THE NETWORK CABLES

Use the following table for setting the push button switch and for selecting either a crossover or straight-through cable when connecting the print server to other devices.

Connecting Network Port	Connecting Device	Cable Used
Model PS104 Print Server		
Port 1 set to Uplink	Hub or switch	Straight-through cable
Port 1 set to Normal	PC or router	Straight-through cable
Ports 2 through 4	PC or router	Straight-through cable
Model PS105 Print Server		
Port 2 set to Uplink	Hub or switch	Straight-through cable
Port 2 set to Normal	PC or router	Straight-through cable
Ports 3 through 5	PC or router	Straight-through cable
Model PS110 and PS113 Print Servers		
	Hub or switch	Straight-through cable
	PC	Crossover cable

Note: Ethernet specifications limit the twisted pair cable (called a twisted pair segment) extended from a network port to 100 meters in length

Using the BNC Network Port (Model PS105)

The BNC-T connector included in the package contents must be used with thin coaxial cable for a 10BASE2 connection to other network devices that have a BNC port. To terminate the connection on the last device in the network segment, you must use the BNC terminator (also included in the package contents).

Ethernet specifications limit the segment length of coaxial cable to 185 m, the maximum distance between nodes to 0.5 m, and the maximum number of nodes per segment to 30. Make sure the cable meets the specifications as outlined in Installation and Reference for the Model PS104/PS105/PS110/PS113 Print Server on the PS100 Series Print Server Resource CD.

VERIFY POWER

Connect the power adapter first to the power receptacle on the rear panel of the print server and then to the power outlet on the wall. When power has been applied to the print server:

- The green Pwr (power) LED on the front panel is on.
- On the Model PS104 and Model PS105 print servers, the green Link/Rx LED on each connected network port is on.
- On the Model PS110 Print Server, the Link LED on the connected network port is on.
- The green Link/Act LED on the connected PRINTER, PRINTER 1, PRINTER 2 or PRINTER 3 port is on.

If you find any problems, refer to "Troubleshooting Information."

Make sure the network interface cards installed in the workstations are in working condition and the software driver has been installed on the cards.

If required, verify the integrity of the print server by resetting it. Turn power to the print server off and then back on. If the problem continues and you have completed all the preceding diagnoses, contact NETGEAR Customer Support. For the telephone number of the representative in your area, see the Support Information Card that is included in your package contents.

ACCESS THE NETWORK PRINTER

If you are using Windows 95, Windows 98, Windows 2000, or Windows NT, this section provides you with information about how to set up each Windows PC so that it can recognize the print server.

Before proceeding with these instructions, make sure you have assigned a name to your workgroup on your PC.

Note: Installation and setup of the NETGEAR software is required on each PC needing access to the printers that will be attached to the print server.

Install the FirstGear for Print Server: Windows User

FirstGear, a software program used with NETGEAR products for quick and easy installation, is provided on the CD-ROM included in your package contents.

To install FirstGear on your PC:

1. Turn the power on to your PC.
2. Insert the NETGEAR Resource CD-ROM.
3. The installation process will start with the display of the NETGEAR window. If it does not, click on Start > Run >

   and type in "Install.exe" at the prompt (for example, "D:Install.exe") to start the installation process.

4. Click on “Next” when the FirstGear window opens.

5. Choose “User PC Installation,” and click on “Next.”

⇨ **Note:** NETGEAR strongly recommends that you exit all Windows programs before running the Setup program.

6. Click on “Next” when the “NETGEAR Print Server Software Installation” window opens.

7. Click on “Next” to install the NETGEAR Print Server program in the Program Files folder.

8. Click on “Next” to title the program folder “FirstGear for Print Server” (the default name). You may also type in a unique name for the print server folder.

   Verify that the information on the screen is correct.

9. Click on “Finish” when the “Setup Complete” window opens.

The FirstGear Print Server Program is now installed on your PC.

Setting Up Your PC to Recognize the Print Server

You must set up each PC that will print to the print server. Before proceeding, verify that:

- The print cable is connected to the printer port.
- The AC adapter is plugged into the wall socket.
- The Ethernet cable is plugged into the LAN.

To set up each PC:

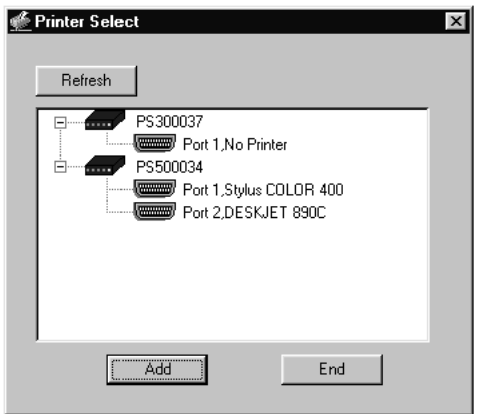
1. Double-click on the desktop icon you named in step 8 of the previous section.

2. Click on “Setup.”

3. Click on “OK” after checking that the print server and printer connected to it are powered on and that the cables are properly connected.

⇨ **Note:** If the cables are not properly connected, your PC screen will appear empty when the “Printer Select” window appears. If this is the case, check on the cable connections and hit the “Refresh” button, which will initiate the PC browse again for a port.

4. Click on the printer port you want to use with the print server, and click on “Add.”



5. Click on “No” when asked if there is an Epson Stylus COLOR printer attached to the port, and continue on to step 6.

   If you do have an Epson Stylus COLOR printer (or plan to install one), click on “Yes.” You must now disable the Epson printer. To disable, start the Epson Spool Manager from the Program Files menu. Select “Queue Setup,” click on “Use Print Manager For This Port,” and click on “OK” to exit.

6. Click on “OK” when the “Add Port” screen appears, informing you that you have successfully added the port.

   If you are a Windows 95, 98, or 2000 user, take note of this port number (the number is written as “PSxxxxxx_P1” or “PSxxxxxx_P2”). You will need this information for step 3 in the next section.

The next sections are written for Windows 95, 98, or 2000 users and for Windows NT users, respectively. Follow the appropriate instructions, and continue to the final section (“Complete the Setup Process”) to conclude the setup procedure.

Windows 95, 98, or 2000 Users

1. Click on “Next” after clicking on the Manufacturer and Printer Model you are adding in the “Add Printer Wizard” screen.

   If your printer is not listed, click on “Have Disk” and insert the driver disk that you received from the printer manufacturer. Install the driver, proceeding as instructed until the “Add Printer Wizard” window opens.

2. If you have already installed the printer driver, select “Keep existing driver” and click on “Next.” If you have not installed the driver, do so now as prompted by the screen.

3. Click on the “PSxxxxxxx_P1 (or PSxxxxxx_P2) Netgear Print Server” that you selected in step 6 when the next “Add Printer Wizard” appears, and click on “Next.”

4. Type a name for the printer (if you want to have a unique name), decide if you want this printer to be your default printer, and then click on “Next.”

Windows NT Users

1. Select the port you added in step 6 in the previous section, and click on “Next.” Do not click on “add port.”

2. Click on “Next” after clicking on the Manufacturer and Printer Model you are adding in the “Add Printer Wizard” screen.

   If your printer is not listed, click on “Have Disk” and insert the driver disk that you received from the printer manufacturer. Install the driver, proceeding as instructed until the “Add Printer Wizard” window opens.

3. The “Add Printer Wizard” screen appears. You can name the printer a unique name or keep the default name of the printer as it appears on screen. Click on “Next.”

4. The “Add Printer Wizard” screen appears. With this screen, you can choose to either share or not share the print server with other users in the network. If you do want to share the print server, you must click on all of the operating systems that will be sharing the print server, and then click on “Next.”

Complete the Setup Process (Windows 95/98/2000 and NT)

1. Select “Yes” when asked to print a test page, and click on “Finish.”

2. Click on “End” in the “Add Port” screen to complete the `setup process.

You are now ready to use the printer attached to your print server.

TROUBLESHOOTING

Problem	Solution
When using the FirstGear Setup Program to browse the network from the network administrator's PC, the print server cannot be seen.	Because either a hardware or software problem could prevent you from seeing the print server from the managing station, make sure that: There is a proper link established between the print server and the hub or workstation. If the LINK LED is on, the link is good. You use proper cables. With 10BASE-T connections, you can use Category 3, 4, or 5 cables. With 100BASE-TX connections, you can use only Category 5 cables. With 10BASE-2 connections through the BNC port on the Model PS105, make sure the cable meets the specifications as outlined in Installation and Reference for the Model PS104/PS105/PS110/PS113 Print Server on the PS100 Series Print Server Resource CD. The NetBEUI protocol is installed in the PC. By default, the FirstGear Setup Program uses the NetBEUI protocol to search for print servers connected on the same network as the network administrator's PC. Click on the "Protocol" button on the main screen to make sure that NetBEUI is selected.
The print server is not listed when you run the FirstGear For Print Server Setup program.	Check the connections to the print server, and ensure that it is ON. If your LAN has TCP/IP ONLY, and does not have a DHCP server, the print server will not be listed. You must use the IPSetup program to assign an IP address to the print server. The IPSetup program is installed with the ADMIN installation.
You do not know what network protocols are installed on your PC.	To check or change your network protocols: Navigate to the Network Properties screen by choosing Start>Settings>Control Panel>Network. The "Configuration" tab of the Network Properties screen will appear. Protocols that are installed are listed. To add a protocol, select Add>Protocol>Microsoft and then select the chosen protocol. For TCP/IP, the Properties button allows you to set the IP address of your PC.
When printing using some software applications (for example, PowerPoint), it takes an extremely long time and the printout is incorrect.	The printer is configured to start printing after the first page is spooled. To change this setting: Double-click on "My Computer," double-click on "Control Panel," double-click on "Printers," and click on your printer. With your printer highlighted, click the right mouse button and click on "Properties." Click on the "Details" tab and then click on "Spool Settings." When the "Details" window opens, choose "Start printing after last page is spooled" and click on "OK."

REPLACEMENT POWER ADAPTER

Order Code	PS104
PWR-002-004	Power adapter (12 V DC, 1.2 A), linear, North America
PWR-002-010	Power adapter (12 V DC, 1.2 A) linear, Australia
PWR-002-006	Power adapter (12 V DC, 1.2 A) linear, General Europe
PWR-002-005	Power adapter (12 V DC, 1.2 A), linear, Japan
PWR-002-008	Power adapter (12 V DC, 1.2 A), linear, United Kingdom
Order Code	**PS105/PS110**
PWR-012-101	Power adapter (12 V DC, 800 mA), linear, North America
PWR-012-201	Power adapter (12 V DC, 1.0 A) linear, Australia
PWR-012-301	Power adapter (12 V DC, 1.0 A) linear, General Europe
PWR-012-401	Power adapter (12 V DC, 800 mA), linear, Japan
PWR-012-701	Power adapter (12 V DC, 800 mA), linear, United Kingdom
Order Code	**PS113**
PWR-012-101	Power adapter (12 V DC, 800 mA), linear, North America
PWR-012-281	Power adapter (12 V DC, 800 mA) linear, Australia
PWR-012-381	Power adapter (12 V DC, 800 mA) linear, General Europe
PWR-012-401	Power adapter (12 V DC, 800 mA), linear, Japan
PWR-012-701	Power adapter (12 V DC, 800 mA), linear, United Kingdom

TECHNICAL SPECIFICATIONS

General Specifications		
Network Protocol and Standards Compatibility		
IEEE 802.3u, 100BASE-TX, Fast Ethernet IEEE 802.3i 10BASE-T CSMA/CD		
Interface		
Model PS104 Print Server	Four 10BASE-T network ports (RJ-45)	
Model PS105 Print Server	Four 10BASE-T network ports (RJ-45) and one BNC port	
Model PS110 Print Server	One 10/100BASE-T network port (RJ-45)	
Model PS113 Print Server	One 10/100BASE-T network port (RJ-45)	
Power Specifications		
Input voltage	100 to 240 V AC, 50 to 60 Hz, according to the power adapter	
Output voltage	12 V DC at 0.58 Amps, maximum	
Power consumption	7 W maximum 0.8	
Physical Specifications	**PS104/PS105/PS110**	**PS113**
Width	7.4 in. (18.9 cm)	9.3 in. (23.5 cm)
Height	1.2 in. (3.0 cm)	1.0 in. (2.6 cm)
Depth	4.8 in. (12.2 cm)	4.0 in. (10.1 cm)
Weight	1.61 lb. (0.73 kg)	1.3 lb. (0.50 kg)
Environmental Specifications		
Operating temperature	0∞ to 40∞ C (32∞ to 104∞ F)	
Operating humidity	90% maximum relative humidity, noncondensing	
Electromagnetic Emissions		
CE mark, commercial		
FCC Part 15, Class B		
EN 55 022 (CISPR 22), Class B		
VCCI Class B ITE		
EN50082-1		
Safety Agency Approvals, Power Adapter		
CE mark, commercial		
UL listed		
CSA certified		
TUV licensed		
T-Mark		
Warranty Information		
Print server	5 years	
Power adapter	1 year	

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Trademarks

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Statement of Conditions

In the interest of improving internal design, operational function, and/or reliability, NETGEAR reserves the right to make changes to the products described in this document without notice.

NETGEAR does not assume any liability that may occur due to the use or application of the product(s) or circuit layout(s) described herein.

Certificate of the Manufacturer/Importer

It is hereby certified that the Model PS104, Model PS105, Model PS110, or Model PS113 print server has been suppressed in accordance with the conditions set out in the BMPT-AmtsblVfg 243/1991 and Vfg 46/1992. The operation of some equipment (for example, test transmitters) in accordance with the regulations may, however, be subject to certain restrictions. Please refer to the notes in the operating instructions.

Federal Office for Telecommunications Approvals has been notified of the placing of this equipment on the market and has been granted the right to test the series for compliance with the regulations.

Federal Communications Commission (FCC) Compliance Notice: Radio Frequency Notice

Note: Modifications to this device change it from the original state it was in when tested and may alter the device so that it no longer complies with FCC testing limitations for Class B digital devices. According to FCC regulations, the user could be prohibited from operating this equipment if it is modified.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Declaration of Conformity

Model PS104, Model PS105, Model PS110 and Model PS113 print servers.

FC Tested to comply with FCC Standards

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

EN 55 022 Statement

This is to certify that the Model PS104, Model PS105, Model PS110, or Model PS113 print server is shielded against the generation of radio interference in accordance with the application of Council Directive 89/336/EEC, Article 4a. Conformity is declared by the application of EN 55 022 Class B (CISPR 22).

Compliance is dependent upon the use of shielded data cables.

Canadian Department of Communications Radio Interference Regulations

This digital apparatus (Model PS104, Model PS105, Model PS110, or Model PS113) does not exceed the Class B limits for radio-noise emissions from digital apparatus as set out in the Radio Interference Regulations of the Canadian Department of Communications.

Règlement sur le brouillage radioélectrique du ministère des Communications

Cet appareil numérique (Model PS104, Model PS105, Model PS110, or Model PS113) respecte les limites de bruits radioélectriques visant les appareils numériques de classe B prescrites dans le Règlement sur le brouillage radioélectrique du ministère des Communications du Canada.

NETGEAR™

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Go to **http://www.NETGEAR.com** for the NETGEAR Web page.
Defective or damaged merchandise can be returned to your point-of-sale representative.

IMPORTANT!

Please register online. YOU MUST REGISTER TO OBTAIN TECHNICAL SUPPORT. PLEASE RETAIN PROOF OF PURCHASE and this warranty information. To get product support, or to obtain product information and NETGEAR product documentation, direct your Web browser to the **http://www.NETGEAR.com** Web page.

To register online, direct your Web browser to the **http://www.gearguy.com/pub/registration** Web page. If you do not have access to the World Wide Web, you can print a registration card and mail it to NETGEAR customer service. The card is included on your Drivers and Diagnostics disk as a Microsoft Word document file called **register.doc**. Download the file, print the form, and fill in the information. Then mail the completed form to:

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